

REMARKS/ARGUMENTS

The Office Action mailed January 25, 2006 has been reviewed and carefully considered. Claims 1, 3-6, 8-21, 23, 29, and 30 are pending in this application, with claims 1 and 6 being the only independent claims. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Claim Amendments

Independent claim 1 is amended to incorporate the limitation of dependent claims 27 and 28 and now recites “detecting, using the angle measurement transmitter, an angle of rotation of the printing roll” and “triggering, using the control electronics, activation of said scanning apparatus with a predicted time-delay signal in response to detection of the reference object in said step of detecting, the time delay for said time-delay signal being functionally dependent on a predetermined distance between the reference object and the measurement object”. In addition the step of scanning is amended so that it is performed in response to the trigger of the control electronics. These limitations are described on page 10, line 20 to page 11, line 11 in the specification. The limitation in the last four lines of claim 1 is canceled and written as dependent claim 30.

Independent claim 6 is similarly amended to include the limitations of dependent claims 22 and 24 and now recites “an angle measurement transmitter on the printing roll for detecting an angle of rotation of said printing roll, said transmitter being electrically operatively connected to said apparatus” and “control electronics unit triggering activation of said scanning apparatus with a predicted time-delay signal, the time delay for said time-delay signal being functionally dependent on a predetermined distance between the reference object and the

measurement object”. Support for these limitations is also found on page 10, line 20 to page 11, line 11 in the specification.

Dependent claim 23 is amended to be consistent with the changes to independent claim 6 and now recites that the control electronics trigger the scanning apparatus “when a prescribed angle-of-rotation increment after detection of the reference object is reached, the angle-of-rotation increment corresponding to the predetermined distance between the reference and measurement objects.

Dependent claim 3 is amended to correct the claim dependency to claim 1.

New dependent claim 29 is added to depend from claim 1 and recites limitations similar to claim 23.

Claims 22, 24, and 25-28 are canceled without prejudice.

Rejection of Claims under 35 U.S.C. §112, second paragraph

Claim 3 is rejected under 35 U.S.C. §112, second paragraph because it depends from itself. Claim 3 is amended to depend from independent claim 1. In view of the amendments, the rejection under 35 U.S.C. §112, second paragraph is now overcome.

Rejection of Claims under 35 U.S.C. §§102 and 103

Claims 6 and 25 stand rejected under 35 U.S.C. §102(a) as anticipated by U.S. Patent No. 6,108,436 (Jansen).

Claims 1 and 26 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of U.S. Patent No. 5,289,000 (Toyofuku).

Claims 3 and 4 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Toyofuku and U.S. Patent No. 5,546,859 (Hern).

Claim 5 stands rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Toyofuku and U.S. Patent No. 5,363,174 (Magde).

Claims 8-9 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of U.S. Patent No. 6,061,144 (Mamizuka).

Claims 10-16 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Mamizuka and U.S. Patent No. 5,856,876 (Sasanuma).

Claims 17-21 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Mamizuka and Toyofuku.

Claims 22-23 stand rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Hern.

Claim 24 stands rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Hern and Magde.

Claim 27 stands rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Magde.

Claim 28 stands rejected under 35 U.S.C. §103 as unpatentable over Jansen in view of Magde in view of Hern.

Independent claim 1 is amended so that independent claim 1 now includes limitations previously recited in claims 25, 27, and 28. More specifically, independent claim 1 now recites “detecting, during a printing process, a position of a reference object on the printing medium, the reference object being arranged ahead of the at least one measurement object relative to a travel direction of the printing medium”, “detecting, using the angle measurement transmitter, an angle of rotation of the printing roll”, “triggering, using the control electronics, activation of said scanning apparatus with a predicted time-delay signal in response to detection

of the reference object in said step of detecting, the time delay for said time-delay signal being functionally dependent on a predetermined distance between the reference object and the measurement object”, and “scanning, in response to said step of triggering, the at least one measurement object with at least one sensor”. As stated above, the combination of limitations was rejected as being unpatentable over Jansen in view of Magde and Hern.

It is respectfully submitted that independent claim 1 is allowable over the prior art of record because none of the prior art references, alone or in combination, disclose, teach or suggest “triggering, using the control electronics, activation of said scanning apparatus with a predicted time-delay signal in response to detection of the reference object in said step of detecting, the time delay for said time-delay signal being functionally dependent on a predetermined distance between the reference object and the measurement object”.

The Examiner acknowledges that Jansen fails to disclose this limitation. The following description of Jansen is presented to show that even the combination of the teachings of Jansen with the other cited references fails to disclose the above limitation. Jansen is directed to a system for controlling registration of the different colors of a multicolor print. According to Jansen, a plurality of marks 21-26 are printed on a printing material and an image recording means 14 such as a digital or CCD camera 36 monitors the location of the colors (see col. 4, lines 36-44, of Jansen). Accordingly, the sensor of Jansen is a camera which merely takes a picture of the markings 21-26. Jansen also fails to disclose that the scanning of the marks is activated in response to the detection of a registration object. Rather, the monitoring means 14 of Jansen takes an image of the reference marks 21-26 at a predetermined time at which the marks are predicted to be in the field of the camera (see col. 5, lines 8-34 of Jansen). Only during processing of the is one of the marks is determined to be a reference (see col. 3, line 60 to col. 4,

line 5). Since all of the marks, including the reference mark, are imaged simultaneously and determination of the reference is made during subsequent processing, Jansen fails to disclose, teach, or suggest “triggering, using the control electronics, activation of said scanning apparatus with a predicted time-delay signal in response to detection of the reference object in said step of detecting, the time delay for said time-delay signal being functionally dependent on a predetermined distance between the reference object and the measurement object”, as now expressly recited in independent claim 1.

The above limitation was previously recited in dependent claim 27, which the Examiner rejected as being unpatentable in view of Jansen and Magde. As explained below, Magde also fails to disclose, teach or suggest this limitation because Magde scans sections of the document and compares optical density of the scanned sections of the document to the optical density of a reference strip which teaches nothing about triggering a scanning apparatus in response to the detection of a reference object.

Magde discloses a method and apparatus for background control in an electrostatographic printing machine. In the device of Magde, a belt 10 includes a photoconductive surface layer is charged and advanced to an imaging station B where an original document 32 is scanned for forming a light image of the original input document (see col. 4, lines 38-41 and 59-62 of Magde). The light image is reflected and transmitted to the belt 10 where an electrostatic latent image of the original document is recorded (col. 4, lines 62-66). The original document 32 is arranged on a platen 34 abutting registration edge 33 and a white reference strip 35 is positioned under the platen 34 for providing a reference measurement point (col. 4, line 67 to col. 5, line 6). A level of illumination within the optical path between an original document 32 and the belt 10 is measured to control voltage applied to the exposure lamp

42 (col. 5, lines 30-37). For this purpose, an optical sensor 49 is connected to a controller 31 and is positioned in the optical path for monitoring segments of a document as it is scanned (col. 5, lines 37-40 and col. 7, lines 34-37). The optical sensor 49 produces an indication of optical density at any preselected or designated location along a document being scanned, as well as the white reference strip 35 (col. 7, lines 42-46). During operation, the optical sensor provides a signal in response to light reflected from the white reference strip 35 and then detects the lead edge of the original document 32 on the platen 34 (col. 7, lines 50-55). The controller 31 provides an output signal bases on these signals to eliminate background development that will appear on the copy sheet (col. 7, lines 65-68).

The Examiner alleges that the limitation of “triggering, using the control electronics, activation of said scanning apparatus with a predicted time-delay signal in response to detection of the reference object in said step of detecting” is taught at col. 9, lines 17-21 of Magde. However, this portion of Magde relates to obtaining an average optical density of the white reference strip 35 (see col. 9, lines 10-14). As described above, the white reference strip is not a reference object on a paper web. According to Magde, once this average optical density is obtained, the leading edge of the document to be imaged is scanned and an average optical density of that section of the document is compared to the average optical density of the white reference strip (col. 10, lines 3-7). If the average optical density of the document is less than or equal to that of the reference, then it is determined that no image is present in that segment of the document (col. 10, lines 7-15). If the average optical density of the document is greater than that of the reference, then it is determined that image information is present (col. 10, lines 20-28). The purpose of determining whether image information is present is to turn on or off

compensation, i.e., bias voltage settings, which eliminates background development that will appear on the copy sheet.

The comparison of optical density values of a document segment and the white reference strip does not disclose, teach or suggest “triggering, using the control electronics, activation of said scanning apparatus with a predicted time-delay signal in response to detection of the reference object in said step of detecting”, as expressly recited in independent claim 1.

Hern also fails to teach this limitation. Hern discloses a device for presetting a cut-off register in a folder of a web-fed printing press. A marking device 10 is arranged in front of the first printing unit and applies marks 9 onto side regions of the web (see col. 4, lines 16-19 of Hern). The marks permit the webs 6 to be fed into folder 5 in precise web-to-web register (col. 4, lines 19-21). A detector detects when a gap or channel 12 in the blanket cylinder passes the detector, which causes marking device 10 to apply the mark (col. 4, lines 35-41). According to an embodiment, the gap is detected indirectly using an angle encoder or detector 20 (col. 6, lines 3-16; and Fig. 7). Since Hern discloses detecting a gap in the blanket cylinder, Hern fails to teach or suggest detecting a reference object and “triggering, using the control electronics, activation of said scanning apparatus with a predicted time-delay signal in response to detection of the reference object in said step of detecting”, as now expressly recited in independent claim 1.

In view of the above amendments and remarks, independent claim 1 is deemed to be allowable over the Jansen in view of Magde and Hern.

Independent claim 6 is amended to include limitations similar to the above limitations of independent claim 1 and is therefore deemed allowable for the same reasons as is independent claim 1.

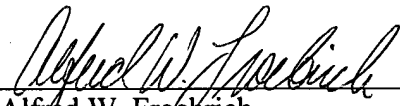
Dependent claims 3-5, 8-21, 23, 29, and 30, each being dependent on one of independent claims 1 and 6, are allowable for the same reasons as are independent claims 1 and 6, as well as for the additional recitations contained therein.

In view of the above amendments and remarks, the application is deemed to be in condition for allowance and notice to that effect is solicited.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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